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10/582,440	04/23/2007	Seok-Heon Cho	1403-06	6957

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ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/582,440	CHO ET AL.
Office Action Summary	Examiner	Art Unit	
	QUN SHEN	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>08 June 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 June 2006</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☒ All   b)☐ Some *   c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date <u>6/8/06</u>.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This communication is a First Action Non-Final on the merits. Claims 1-22, as preliminarily amended, are currently pending and have been considered below.

Priority

Applicant's foreign priority claim for the benefits of KOREA 10-2003-0088895 filed on December 09, 2003 and KOREA 10-2004-0050346 filed on June 30, 2004 on the basis of 371 PCT /KR04/03212 filed on December 08, 2004, is acknowledged.

Specification

Figs 1 - 3 are described in both background art (page 2-3) as prior art and disclosure of invention (at least page 7) related to the embodiment of invention. These figures appear to be related to prior art.

Appropriate corrections are required.

Drawings

1.   Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

> The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: **(See MPEP Ch. 2141)**

> a. Determining the scope and contents of the prior art;
> b. Ascertaining the differences between the prior art and the claims in issue;
> c. Resolving the level of ordinary skill in the pertinent art; and
> d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

2.   **Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

US 2004/0250069 A1, Kosamo, (hereinafter Kosamo), in view of US 2003/0078061

A1, Kim (hereinafter Kim), and further in view of IEEE Std 802.16-2001 (hereinafter

IEEE) and AAPA (Applicant Admitted Prior Art).

As to claim 1, Kosamo discloses a method for requesting a service-specific traffic

encryption key from a subscriber station to a base station in a wireless portable Internet

system (Fig 1: S10, para [0034], HSS, GGSN/GMSC, and base station are part of

network, although HSS (home subscriber server) is drawn separately from base station,

it can be connected to a base station or GGSN/GMSC but accessed through a base

station by a subscriber station (UE)). The method comprising:

(a) determining a service type for the requested traffic encryption key to be used for

security on a traffic connection to the base station prior to establishing the traffic

connection (para [0009]);

(b) generating a Key Request message for requesting a traffic encryption key

corresponding to the determined service type (para [0014], [0016-0017]).

In Kosamo, communication between a base station and a subscriber station may be

implicit, and Kosamo does not explicitly disclose (c) sending the generated Key Request

message to the base station using a media access control (MAC) message.

Nevertheless, Kim also discloses a method and apparatus for providing commercial

broadcast service between base station and subscriber stations (Figs 1-3). Further,

IEEE, defines Key Request message in its over the air (OTA) protocol for SS (service

subscriber), i.e. to send the message to the BS (i.e. base station) for periodically

refreshing of security keying material (IEEE: Section 7.2.2). Such message is typically

sent using a MAC message (see IEEE: section 6, Table 25, code 7). AAPA also

teaches using IEEE for requesting a service-specific traffic encryption key from a

subscriber station to a base station in a wireless portable Internet system (AAPA:

specification, para [0028]). Consider Kosamo. Kim, IEEE and AAPA's teachings as a

whole, it would have been obvious to one of skill in the art at the time of invention to

modify Kosamo 's method by incorporating IEEE's specification on sending Key

Request message to the base station for a subscriber station to request subscribed

services.

As to claim 2, Kosamo as modified discloses the method as claimed in claim 1, wherein

the service type in the step (b) is recorded in a parameter included in the Key Request

message (Kosamo: para [0009], IEEE: section 7.2.2).

As to claim 3, Kosamo as modified discloses the method as claimed in claim 1, wherein

the service type comprises a unicast service (IEEE: section 6.2.6.4.1), a multicast

service, and a broadcast service (IEEE: section 6.2.6.4.2).

As to claim 4, Kosamo as modified discloses the method as claimed in claim 3, wherein

when the service type is a multicast service, the parameter of the Key Request

message includes an ID containing an identifier of a multicast service group for a

subscriber (IEEE: section 6.2.6.4.2, Table 59).

As to claim 5, Kosamo as modified discloses the method as claimed in claim 3, wherein

the step (c) includes sending the Key Request message using a PKM-REQ (Privacy

Key Management-Request) that is one of MAC messages of the IEEE 802.16 standard

protocol (IEEE: 6.2.2.3.9).

As to claim 6, Kosamo as modified discloses a method for generating and distributing a

service-specific traffic encryption key from a base station to a subscriber station in a

wireless portable Internet system (Kosamo: Fig 1:S11, para [0035], Kim: para [0019],

AAPA: specification, para [0028]), the method comprising:

(a) receiving a Key Request message from the subscriber station requesting the

service-specific traffic encryption key (see analysis of claim 1);

(b) analyzing the Key Request message to determine a service type (Kosamo: para

[0035]);

(c) generating a traffic encryption key according to the determined service type

(Kosamo: para [0035]); and (d) generating a Key Reply message including the

generated traffic encryption key (Kosamo: Fig 2: S24, paras [0043-0045]) and sending

the generated Key Reply message to the subscriber station using a MAC message

(IEEE: section 6.2.2.3.9.6).

As to claim 7, claim 7 is rejected on the same ground as claim 2.

As to claim 8, Kosamo as modified discloses the method as claimed in claim 6, wherein

the step (c) includes: in the case that generation of the traffic encryption key for the

subscriber station is a failure due to the determined service type, the base station

generating a Key Reject message including an error code indicating a reason of the

failure and sending the generated Key Reject message to the subscriber station using a

MAC message (Kosamo: para [0035], IEEE: 6.2.2.3.9.7).

As to claim 9, Kosamo as modified discloses the method as claimed in claim 8 but does

not explicitly disclose the base station enters "unsupported service type" on the error

code and sends the error code to the subscriber station in the case that the traffic

encryption key for a service type corresponding to a traffic encryption key request of the

subscriber station cannot be generated and distributed. However, IEEE defines Key

Request message and Key Reply/Reject message between base station and mobile

station and error code with respect to reason of Key Reject and also assign numerous

error codes for different reasons (see IEEE: section 11.2.10, Table 132). Therefore, it

would have been obvious to one of skill in the art at the time of invention to utilize

messages and protocol defined in IEEE to communicate, identify and indicate traffic

encryption key request of the subscriber station cannot be generated and distributed in

the situation when the requested service is unsupported.

Claim 10 is rejected the same ground as claim 3.

As to claim 11, Kosamo as modified discloses the method as claimed in claim 10 but

does not explicitly disclose the base station enters "unauthorized multicast service

group ID" on the error code and sends the error code to the subscriber station in the

case that the service type for the traffic encryption key requested by the subscriber

station is a multicast service and defined as unsupported multicast service for the

specific multicast service group ID, because the SS is not authorized for the specific

multicast service group by the base station. However, IEEE defines Key Request

message and Key Reject message between base station and mobile station and error

code with respect to reason of Key Reject. Therefore, it would have been obvious to

one of skill in the art at the time of invention to utilize messages and protocol defined in

IEEE to communicate, identify and indicate situation when the requested service is

unsupported.

As to claim 12, Kosamo as modified discloses the method as claimed in claim 8,

wherein the Key Reply message and the Key Reject message are sent using a PKM-

RSP (Privacy Key Management-Response) message that is one of MAC messages of

the IEEE 802.16 standard protocol (IEEE: Section 6.2.2.3.9).

As to claim 13, claim 13 recites protocol configuration method that necessitates the

method claims 1 and 6. Rejections on claims 1 and 6 are therefore incorporated herein

(see analysis and rejections above).

As to claim 14, claim 14 is rejected on the same ground as claim 5.

As to claim 15, claim 15 is rejected on the same ground as claim 8 (see analysis and

rejection of claim 8).

As to claim 16, Kosamo as modified discloses the protocol configuration method as

claimed in claim 15, wherein the step (b) comprises: sending the Key Reply message

and the Key Reject message using a PKM-RSP message that is one of MAC messages

of the IEEE 802.16 standard protocol (IEEE: section 6.2.2.3.9).

As to claim 17, claim 17 recites an apparatus claim for the apparatus wirelessly

connected to a base station in a wireless portable Internet system so as to request a

service-specific traffic encryption key from the base station, comprising a Key Request

message generator, a Key Request message sender, a Key Reply/Reject message

receiver, a message analyzer, and a key request controller. The apparatus

encompasses and necessitates method claims 1, 6 and 13. Rejections on claims 1, 6

and 13 are therefore incorporated herein (see analysis and rejection on claims 6 and

13).

As to claim 18, claim 18 is rejected on the same ground as claim . The apparatus as

claimed in claim 17, wherein the Key Request message comprises a service type and a

multicast service group ID of the subscriber station when the service type is a multicast

service (IEEE: section 6.2.12).

As to claim 19, Kosamo as modified discloses the apparatus as claimed in claim 17,

further comprising: a memory for storing information including the traffic encryption key

or the error code resulted from an analysis of the message analyzer under the control of

the key request controller (Kim: para [0039]).

As to claim 20, claim 20 recites an apparatus claim for the apparatus provided to a base station for generating and distributing a service-specific traffic encryption key in a wireless portable Internet system, comprising a Key Request message receiver, a message analyzer, a subscriber discriminator, a traffic encryption key generator, a Key Reply message sender, and a key generation and distribution controller. The apparatus encompasses and necessitates method claims 1, 6 and 13. Rejections on claims 1, 6 and 13 are therefore incorporated herein (see analysis and rejection on claims 1, 6 and 13).

As to claim 21, Kosamo as modified discloses the apparatus as claimed in claim 20, further comprising: a Key Reject message sender for sending a Key Reject message including an error code to the subscriber station using a MAC message under the control of the key generation and distribution controller in the case that the traffic encryption key generator generates an error for the request of the subscriber station (see IEEE: section 6.2.2.3.9.7).

As to claim 22, Kosamo as modified discloses the apparatus as claimed in claim 20, further comprising: a memory for storing information including an analysis result of the message analyzer and a discrimination result of the subscriber discriminator under the control of the key generation and distribution controller (Kim: para [0039]).

Contact Information

3.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUN SHEN whose telephone number is (571)270-7927. The examiner can normally be reached on Monday through Thursday, 9:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LunYi Lao can be reached on 571-272-7671. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/QUN SHEN/   /LUN-YI LAO/
Examiner, Art Unit 2617   Supervisory Patent Examiner, Art
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